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IS 7855 (2011): Aircraft - Declaration of Design and Performance for Aircraft Equipment - Standard Form [TED 14: Aircraft and Space Vehicles]

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(पहला पुनरीक्षण)

Indian Standard

AIRCRAFT — DECLARATION OF DESIGN AND PERFORMANCE FOR AIRCRAFT EQUIPMENT — STANDARD FORM

(First Revision)

ICS 49.020

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 2011 **Price Group 3**

Aircraft, Space Vehicles, Air Cargo Handling and Aircraft Electrical Equipment Sectional Committee, TED 14

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with ISO/TR 224 : 1998 ‘Aircraft — Declaration of design and performance for aircraft equipment — Standard form’ issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Aircraft, Space Vehicles, Air Cargo Handling and Aircraft Electrical Equipment Sectional Committee and approval of the Transport Engineering Division Council.

This standard was first published in 1975 based on ISO/R 224 : 1961. The first revision of this standard has been undertaken with a view to bring it in line with the latest version of ISO/TR 224 : 1998.

The text of ISO/TR Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO 2669 : 1995	Environmental tests for aircraft equipment — Steady-state acceleration
ISO 2671 : 1982	Environmental tests for aircraft equipment — Acoustic vibration
ISO 2678 : 1985	Environmental tests for aircraft equipment — Insulation resistance and high voltage tests for electrical equipment
ISO 2685 : 1998	Aircraft — Environmental test procedure for airborne equipment — Resistance to fire in designated fire zone
ISO 7137 : 1995	Aircraft — Environmental conditions and test procedures for airborne equipment

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AIRCRAFT — DECLARATION OF DESIGN AND PERFORMANCE FOR AIRCRAFT EQUIPMENT — STANDARD FORM

(First Revision)

1 Scope

This Technical Report specifies the standard form to be used for a declaration of design and performance (DDP) for aircraft equipment.

A DDP is the commitment of a manufacturer to deliver a product complying with the defined dimensions and performances, based on qualification tests carried out by the NSO (National Surveillance Organization), a major user or by the manufacturer himself.

A DDP is not a compulsory procedure, it remains optional; its purpose is to avoid repeated qualification tests for each use.

For a specific program, the DDP can be certified for the aircraft manufacturer or the NSO. This means that the commitments of the manufacturer were met when the aircraft was certified.

The DDP is intended for components and equipment which do not relate to any national or international or aircraft manufacturer specification.

If a normative document giving a full definition of a product exists, the dimensions, performances and qualification of the product in question must be in accordance with that document.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Technical Report. At the time of the publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on the International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2669:1995, *Environmental tests for aircraft equipment – Steady-state acceleration.*

ISO 2671:1982, *Environmental tests for aircraft equipment – Acoustic vibration*.

ISO 2678:1985, *Environmental tests for aircraft equipment – Insulation resistance and high voltage tests for electrical equipment*.

ISO 2685:—[1], *Aircraft – Environmental test procedure for airborne equipment – Resistance to fire in designated fire zone*.

ISO 7137:1995, *Aircraft – Environmental conditions and test procedures for airborne equipment*.

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1) To be published. (Revision of ISO 2685:1992)

3 Specifications relating to the standard form

3.1 The content of a DDP for aircraft equipment shall be in accordance with the requirements of annex A.

The declaration shall comply with the headings and be in order given in annex A, using additional spacing if required.

Where a heading is not appropriate, insert "not applicable".

Where test are specified but have not been carried out, insert "not tested".

3.2 Each page of the declaration shall be numbered as follows:

Page 1 of .... pages
Page 2 of .... pages
etc.

3.3 Approving authorities may be

a) aircraft or systems manufacturers; or

b) national/governmental agencies, according to the laws and regulations in force in each country considered, defining the meaning of the stamp on the declaration;

c) or both.

Annex A
(normative)

Standard form for declaration of design and performance (DDP)

DDP no.: ....
Issue no.: ....

NOTE — Before specifying equipment, check with [manufacturer's name] that this declaration is the currently valid version.

Approving authority (if applicable) ....

Manufacturer

Name: ....

Address:...

....

Declaration of design and performance

of ....
(quote generic name of equipment)

Type number: ....

Development stage: preliminary study / prototype / production / flying clearance / airworthiness certification

Other identification data (e.g. computer code): ....

Description: ....

Mass: ....

Overall dimensions and position of the centre of gravity
(or reference to drawing if attached): ....

Assembly diagram number: ....

Definition specification reference: ....

Drawing nomenclature reference: ....

Quality control procedure reference: ....

Development contract no. (if applicable): ....

Modification standard reference: ....
(if applicable to this declaration)

System or wiring diagram (if applicable): ....

Maintenance, repair and overhaul manual reference: ....

Test report references: ....

Fault analysis reports (as appropriate): ....

Details of approvals obtained for similar equipment (and a brief summary of equipment application and experience):

....

Airworthiness requirements with which the equipment complies (if applicable): ....

....

Performance

The limits of declared performance and those implied by the declarations below are not intended to be absolute, but are intended to indicate the performance which has been shown by tests.

Declare the equipment performance limits under the appropriate headings (i.e. electrical and mechanical input and output characteristics which are particular to the equipment, times and duration of cycles, accuracy, etc.).

Declarations

State here those declarations required by the relevant sections of ISO 7137, or, if necesary, by other standards to be specified, relating to environmental and service conditions for aircraft equipment as stated in table A.1, and also any additional declarations required by relevant equipment specifications.

Limitations

Limitations are the minimum life or useful service between equipment overhaul (based on test results and/or operational experience), as well as any standard tests necessary to satisfy safety requirements.

The equipment designer shall state any known limitations of which the user should be aware which are not specifically covered by the above-mentioned declarations.

Departures from specification

The equipment designer shall list any departures from the requirements of ISO 7137, or of other applicable standards to be specified, as well as from the design specifications which the equipment must meet.

Manufacturer's statement

I hereby certify the information contained in this declaration of design and performance (DDP) is accurate.

.... (manufacturer's name) declines all responsibility regarding the satisfactory operation of equipment used beyond the above-declared conditions without prior agreement.

Manufacturer

Name of signatory...

Title or function ....

Approval reference no. ....

Signed ....

On behalf of .... (manufacturer's name)

Date ....

Approving authority

(optional)

Name of signatory ....

Title of position ....

Approval reference no. ....

Signed or stamped ....

On behalf of ....

Dated ....

NOTE — Where authority for obtaining certification is delegated to the user of the equipment, insert the delegated authority.

Additional approval

(optional)

Name of signatory ....

Title of position ....

Signed or stamped ....

On behalf of ....

Date ....

Registered under no. ....
(if applicable)

Table A.1 — Required declarations

Test procedure	**Information** (range, class, category, etc.)	**Test report references or data**	**Reference number of test procedure in ISO 7137**[1)]	**Other relevant specification** (specification no.)	**Relevant individual equipment specification** (if appropriate)
Temperature and altitude			1.1		
Temperature variation			1.2		
Humidity			1.3		
Icing			1.4		
Waterproofness			1.5		
Fluid resistance			1.6		
Sand and dust			1.7		
Fungus resistance			1.8		
Salt spray			1.9		
Operational shocks and crash safety			2.1		
Vibration			2.2		
Steady-state acceleration			2.3	ISO 2669	
Acoustic vibration			2.4	ISO 2671	
Magnetic effect			3.1		
Power input			3.2		
Voltage spike			3.3		
Audio frequency conducted susceptibility (power inputs)			3.4		
Induced signal susceptibility			3.5		
Radio frequency susceptibility (radiated and conducted)			3.6		
Emission of non-essential radio frequency energy			3.7		
Lightning induced transient susceptibility			3.8		
Insulation resistance and high voltage			3.9	ISO 2678	
Direct lightning effects			3.10		
Explosion proofness			4.1		
Fire resistance			4.2	ISO 2685	

1) If an alternative standard is specified, then:
— delete the reference number of test procedure of ISO 7137;
— mention the applicable clause of the alternative standard in column "other specification".

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of ‘BIS Catalogue’ and ‘Standards: Monthly Additions’.

This Indian Standard has been developed from Doc No. : TED 14 (597).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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